REMARKS/ARGUMENTS

The Status of the Claims.

Claims 1 to 3, 5 to 16 and 20 to 24 are pending with entry of this amendment. Claim 1 is amended herein. These amendments introduce no new matter and support is replete throughout the specification. These amendments are made without prejudice and are not to be construed as abandonment of the previously claimed subject matter or agreement with any objection or rejection of record.

With respect to claim 1, the amendment merely deletes an optional species of provisoed out infection, while retaining the genus. Therefore, the scope of the claim is not changed and no new subject matter is added to the claim. No new search or examination is required with regard to this amendment.

Applicants submit that no new matter has been added to the application by way of the above Amendment. Accordingly, entry of the Amendment is respectfully requested.

Interview Summary.

Applicants appreciate that Examiner Wang agreed to a phone interview after final on June 7, 2007. The claim discussed in the Examiner interview was independent claim 23 with regard to the rejection for alleged anticipation by Henderson.

Applicant's representative explained how, the only teaching of compound administration to patients in Henderson exists at column 13, line 50; as also cited in the Action. There, Henderson identifies only those compounds determined by methods described in the specification to inactivate retrovirusescan be used to treat retrovirally-mediated disease in patients. The only method of determining retrovirus inactivation by compounds (described at column 20, line 56) is a method wherein the concentration of a compound was determined to inactivate half of 10^9 HIV-1 virus particles. The determined concentrations are shown in Table 2, at column 22 of Henderson, in the column labeled Protein (virus). However, it was noted that the blank space across from the 6,6'-dithiodinicotinic acid (CPDS limitation of claim 23) in the Table at the concentration column

means "yet to be tested" according to column 20, line 55 of Henderson. It was noted that Henderson directly and unambiguously certified in the Table that this CPDS has not been determined by the methods therein to inactivate HIV. Therefore, CPDS is confirmed not to be taught for administration to retrovirus patients, by Henderson's own words. The Examiner was asked to offer an alternate interpretation of these facts but no clear alternate interpretation was provided.

The Examiner next asserted that the Henderson claims teach the present claim 23. Applicant's representative noted several alternative reasons why Henderson claims 6 and 7 can not be considered to teach the present claim 23. For example, because Henderson incontrovertibly confirms within the specification that he in fact did not determine CPDS to inactivate retroviruses ("yet to be tested"), it can not be said or inferred that he did. Applicant's representative noted that (although irrelevant due to the Henderson certification) the method of claim 6 was additionally fatally flawed (as discussed below) and could not be used to test any compounds. Applicant's representative noted that the claims (although irrelevant) clearly identify compounds generally and specifically that would not inactivate the virus with the claims limited to the undetermined clause "wherein contacting said retrovirus [non-existent, as discussed below] with said compound inactivates the retrovirus." This final clause limitation would not be necessary if all the compounds were previously determined to inactivate retroviruses. We agreed to disagree on this.

Applicant's representative specifically requested the Examiner to provide a fact-based response to the above arguments, and those herein, in any communication responding to this Response.

35 U.S.C. §112, Second Paragraph.

Claims 1, 2, 5, 6, 10 to 12, and 20 to 22 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite because of the alternate limitations regarding "a retrovirus or HIV" in the final clause of the claim. Applicants note that there is nothing indefinite or ambiguous about excluding both a general and a specific embodiment of a claim aspect. However, in order to expedite the prosecution of the application, Applicants have amended the claim to delete the HIV species of the more general retrovirus aspect from the

claim, as requested by the Examiner. As the issue is now moot, Applicants respectfully request withdrawal of the rejection.

Applicants note that the amendment to claim 1 does not raise new issues that would require further consideration or search. Removal of the optional species (HIV retrovirus) while retaining the genus (retrovirus) does not change the scope of the claim, nor does it disqualify previous searches or require additional searches. The remaining genus has been previously considered and searched. Therefore, Applicants respectfully request a full and complete analysis of facts in support of final conclusions in any communications in response to this document.

35 U.S.C. §102.

In order for a reference to anticipate an invention, the reference must teach each and every element of the claimed invention. That is, in order for a reference to anticipate an invention, anticipation requires that "all limitations of the claim are found in the reference, or 'fully met' by it." *Kalman v. Kimberly-Clark Corp.*, 218 USPQ 781, 789 (Fed. Cir. 1983).

Henderson does not anticipate the claims. Claims 23 and 24 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Henderson (U.S. 6,001,555). Applicants traverse.

As a preliminary matter, the rationale for the present rejections is based on Henderson teaching administration of different compounds for treatment of a different disease. Henderson teaches *in vitro* HIV inactivation with certain identified compounds (not CPDS) by a mechanism of zinc finger attack against a specific HIV amino acid sequence. This clearly does not teach, e.g., identifying an individual, and treating an individual, other than an individual with a HIV, by administration of CPDS, by a mechanism of immune response modulation. The two technologies have nearly nothing in common except the mention of CPDS by Henderson in an unrelated context.

As noted in the previous Response, Henderson describes how certain compounds can inactivate retroviruses by attacking CCHC zinc fingers of the viral nucleocapsid. The Action alleges, in section 3, that Henderson "discloses the treatment of retroviruses including lentivirus and oncovirus, with disulfides, such as 6,6'-dithiondinicotinic acid." However, this is literally and certifiably incorrect. Further,

assuming it were correct, it still would not describe the present invention and would not state a case.

Henderson teaches only that "those compounds which inactivate retroviruses, as determined by the methods described herein, can be used to treat retrovirally-mediated diseases...." Emphasis added. However, careful reading of Henderson shows that, e.g., at Table 2 "Disulfide Reagents" 6,6'-dithiondinicotinic acid [CPDS] is not shown to inactivate the virus (see Protein (virus) column associated with abolition of infectivity in the text starting at column 20, line 53). Other compounds are offered as inactivating the retrovirus of the assay (specifically HIV), but Henderson specifically does not show determination of CPDS therein to inactivate a virus. Nowhere in Henderson is CPDS determined to inactive a retrovirus. Therefore, according to the unambiguous statements of Henderson as cited in the Action (column 13, line 51), 6,6'-dithiondinicotinic is clearly not taught as useful to treat retrovirally-mediated diseases.

In the Response to Arguments in the present Action, the Office acknowledges that "the blank cells [in] Table 2 indicate that the compound is yet to be tested for the specific property [viral inactivation]". This supports Applicant's point. Henderson defines compounds that can be used to treat retrovirally-mediated diseases as those compounds which inactivate retroviruses, as determined by the methods described in the text of the specification. Because it is not determined, it is not taught. Henderson can not be said to teach what he acknowledges he did not know.

The Action points to another column of Table 2 in which the "approximate time [T-1/2] required to cross-link one-half of the NC Proteins in the virus at the specified reaction conditions" is presented, as described in column 20. The Action suggests the "antiviral activities of the compounds are also supported by the X-link properties." However, Applicants note that cross-linking of the HIV nucleocapsid (NC) protein has nothing to do with the rejected claims. The cross-linking is not correlated to viral inactivation. Apparently, any disulfide could chemically cross-link these proteins *in vitro*, but this does not teach treatment with CPDS. Furthermore, Applicants note that it is illogical to suggest cross-linking of HIV proteins can teach a treatment of individuals specifically not infected with HIV, as provided in the claims.

The Action suggests at section 10 that claims 6 and 7 might somehow teach, e.g., the present claim 23. Claim 7, dependent on claim 6, recites a long wish list of chemicals that Henderson may suspect can inactivate a retrovirus under some conditions of claim 6. Claim 6 states in part:

6. A method for inactivating a retrovirus, wherein the retrovirus comprises a structure $Cys(X)_2Cys(X)_4His(X)_4Cys$ which chelates a zinc ion, said method comprising the step of contacting said retrovirus with a compound selected from the group consisting of:

disulfides having the formula R--S--S--R; ...

and wherein R is any atom or molecule, and X is selected from the group consisting of F, I, Br and Cl,

wherein the compound contacts said retrovirus thereby causing dissociation of said zinc ion from said $Cys(X)_2Cys(X)_4His(X)_4Cys$ structure; and

wherein contacting said retrovirus with said compound inactivates said retrovirus.

As a preliminary matter, the claim is fatally flawed, or ambiguous at best, for apparently citing a structure of four amino acids halogenated with 10 halogens (i.e., X is F, I, Br or Cl). Applicants believe such a structure does not exist. If such a structure did exist, Applicants believe it would neither chelate zinc ions, nor would contact with a listed compound inactivate a retrovirus. The claim does not teach anything functional.

Assuming arguendo that the claims something functional that makes sense (and they do not), they still do not anticipate present claim 23. The Action alleges claims 6 and 7 show "6,6'-dithiondinicotinic acid is particularly claimed as useful against retrovirus." Even given full scope, the allegation fails to state a *prima facie* case. "Useful against a retrovirus" [e.g., maybe in vitro] is not "determined by the methods described" in Henderson, and does not teach, e.g., identifying an individual in need of immunomodulation and administering CPDS to an individual other than an individual infected with HIV. That is, not all limitations of the claims are taught by the cited claims.

It is accepted practice that not all embodiments of a claim must work for the claim to be enabled for issuance. "It is always possible to put something into a combination to render it inoperative. It is not the function of claims to exclude all such matters, but to

point out what the combination is." *In re Anderson*, 471 F.2d 1237, 176 U.S.P.Q. 331, 335 (C.C.P.A. 1973). For example, although "disulfides having the formula R-S-S-R" are cited in claim 6, even the Office would not argue that all these disulfides are necessarily [inherently] useful in treatment of AIDS patients, as claimed. Even with the membership of CPDS in the large Markush group of claim 7, it similarly can not be said that each member would necessarily function in the method, as claimed. Therefore, just because the compound is listed in a claim, does not necessarily suggest or inherently teach usefulness of the compound for the method. In any case, even assuming that CPDS were to function in a method of claim 6, it is still not taught as useful for modulating immune response by administration to an individual other than an individual infected with a retrovirus. Further, claim 7 taken as a whole, as a dependent claim to fatally flawed claim 6, can make no sense.

Assuming for sake of argument that Henderson allegedly knew CPDS would inactivate HIV, this knowledge was not identified as determined from methods described in Henderson, or he would have placed the result in Table 2. The theoretical knowledge of this argument could have been determined by other methods. Because the theoretical knowledge would not necessarily be from the methods described in the text of Henderson, claim 6 does not inherently teach inactivation of retroviruses, as determined by the methods of the Henderson patent specification.

At section 5 of the Action, identifying an individual in need of immune response modulation is deemed to be found in Henderson. However, Applicants note that not all individuals infected with a retrovirus necessarily need immune modulation. Therefore, the deeming in the Action does not present a *prima facie* case. Even assuming all retrovirally infected individuals need immunomodulation (and they do not), Henderson still does not teach the limitation of identifying an individual in need, and this is not alleged in the Action.

In summary. A person who states they do not know something, can not be said to teach what they do not know. A compound yet to be tested by a method is not determined by the method to be active. A compound possibly tested by other methods is not necessarily tested by methods described. Even assuming a compound were tested to show inactivation of a retrovirus, this does not teach beneficial administration of the compound to an individual other than an individual infected with a retrovirus. The mere existence of

individuals with non-HIV retrovirus infections does not teach a step of identifing them. Even individuals known to have a retrovirus infection are not necessarily in need of immune modulation. No matter how one views the disclosure of Henderson, there remains a long list of reasons confirming it does not teach all the limitations of claim 23. Therefore, Applicants respectfully request withdrawal of the rejections based on Henderson.

Grassetti does not anticipate the claims. Claims 1, 2, 5, 6, 10 to 12 and 20 to 24 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Grassetti (U.S. 4,378,364), as evidenced by Barber (U.S. 5,662,896) and Tagawa (Current Pharm. Design 6:681 (2000)). Applicants traverse.

Grassetti '364 describes treatment of cancer patients with CPDS following surgery to induce a feeling of well-being, pain reduction and increased appetite. Barber and Tagawa discuss an array of alternate techniques in cancer treatment including theory and problems associated with immunotherapy of cancers.

The Action acknowledges Grassetti '364 does not teach at least the limitations of immunomodulation or identifying an individual in need of immune response modulation. The Action falls back on "inherency" arguments to allegedly find these limitations not taught by Grassetti '364.

Controlling case law requires that for an aspect to be inherent in prior art, the aspect must necessarily be present in all embodiments. See, e.g., *In re Best*, 195 USPQ 430; *Ex parte Levy*, 17 USPQ2d 1461; and, *Continental Can Co. USA v. Monsanto Co.*, 20 USPQ2d 1746. For example, according to *Continental Can* missing descriptive matter must necessarily be present in the thing described in the reference.

The Action at section 9 states "'identifying an individual in need of immune response modulation;' is inherently met by the method of treating cancer patient disclosed in the reference, as cancer patients are recognized as 'in need of immune response modulation' See, the abstract in Tagawa and columns 1-2 in Barber, et al." Applicants note that this does not state a *prima facie* case because a case would require a clear showing of, e.g., facts supporting an allegation that all cancer patients are in need of immune response modulation. As discussed below, such an allegation is clearly false and the rejection must be withdrawn.

One skilled in the art understands, and all cited references make it clear, that not all cancer patients are in need of immune response modulation. In general, it is known that most cancers are the result of a genetic error and are thus in need of genetic correction. In most cases, cancer cells repair genetic errors, such as those from background radiation damage to nucleic acids, and revert naturally to normal cells, without the need for immunomodulation. It is known that many cancer cells arise in all of us over the course of our lives and are typically removed by normal unmodulated immune responses and other natural corrective systems, again without the need for modulation of the normal immune response. Even advanced cancers are known to spontaneously revert by normal immune responses without interference of an immune response modulation. In many cases, immune response modulation can be toxic or counter-productive; clearly such a modulation is not needed by the individual exposed to the modulation. There are extensive examples of individuals having a cancer for whom immune response modulation is not necessary. Because cancer patients are clearly not recognized as in need of immune response modulation, e.g., for the many reasons discussed above, the need is not inherent in the cited references. Therefore, Grassetti '364 does not anticipate any of the present claims.

Grassetti '364 focuses on post operative patients, who do not necessarily retain a cancer (see, cited abstract). Should residual cancer cells exist, Grassetti states treatment with CPDS should continue "until the natural defenses of the organism [patient] have destroyed the remaining circulating cancer cells." See column 12, line 4. This statement teaches that patients are not in need of immune response modulation, and actually teaches away from the present claims. What's more, both Barber and Tagawa agree that not all cancer patients are in need of immune modulation.

Tagawa, in the cited abstract, states that modulation of immune responses "is one of the strategies for cancer therapy. ... However, cytokines may induce toxic reactions or produce no substantial effects ..." Tagawa also notes that cancers can result from immunological disorders or defects of a host immunosurveilance system, but this acknowledges the fact that most cancers arise in individuals without such defects. In Figure 1, Tagawa shows how an unmodulated immune system normally works with, e.g., natural antigen presenting cells (APCs) activating cytotoxic T-lymphocytes (CTLs) to provide a

normal CTL-mediated unmodulated immune response against a tumor *in vivo*. This is a clear demonstration that immune modulation is not necessarily needed by cancer patients. The cited references teache that a need for immune response modulation is not inherent in individuals with a cancer.

Barber, at the cited columns 1 and 2, makes it clear that cancer patients are not necessarily in need of immune modulation. For example, at column 1, line 35, Barber suggests that 30% of patients treated with surgery alone will have no recurrence. These cancer patents were not treated with immune modulators and did not need them. Chemotheraphies and radiation therapies also have success without resort to immunomodulation. Even the specific invention of Barber does not require immune modulators to treat cancer patients. For example, in the paragraph traversing columns 2 and 3, Barber optionally identifies toxins or antisense technology for direct administration to a tumor. The evidence goes on to clearly demonstrate the Office would be incorrect in asserting that all cancer patients are necessarily in need of immune modulation.

At section 9 of the Action, the claim limitation "identifying" is somehow found in the incorrect and insufficient allegation that "cancer patients are recognized as 'in need of immune response modulation." Even if the statement were true, and it is not (as discussed above), it would not demonstrate Grassetti teaching, e.g., identifying an individual in need of an immune response modulation. For example, Grassetti does not appear to teach any method step or characteristics for identifying anything, let alone an individual in need of immune response modulation. Even if Grassetti suggested identifying a cancer patient (and he does not) this still would not actually or inherently teach identifying an individual in need of immune response modulation, as discussed above.

Grassetti '364 does not actually or inherently teach at least the limitations of identifying an individual in need of an immune response or administering CPDS to an individual in need of immune response modulation. What's more, Grassetti teaches away from the limitations. The proffered Barber and Tagawa references only confirm that the limitations are not inherently taught by Grassetti. Applicants respectfully request withdrawal of the rejections for alleged anticipation by Grassetti '364.

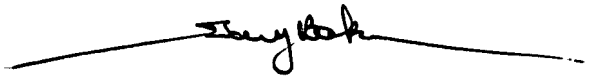
CONCLUSION

In view of the foregoing, Applicants believes all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the claims are deemed not to be in condition for allowance after consideration of this Response, a telephone interview with the Examiner is hereby requested. Please telephone the undersigned at (510) 769-3510 to schedule an interview.

QUINE INTELLECTUAL PROPERTY LAW GROUP
P.O. BOX 458, Alameda, CA 94501
Tel: 510 769-3510
Fax: 510 337-7877
PTO Customer No.: **22798**
Deposit Account No.: **50-0893**

Respectfully submitted,



Gary Baker
Reg. No: 41,595

Attachments:

1) A transmittal sheet; and,
2) A receipt indication postcard.